Review Questions

1. When one object is a specialized version of another object, there is a “is a” relationship between them.
2. In inheritance, the Base class is the general class.
3. In inheritance, the Derived class is the specialized class.
4. Base classes are normally called superclasses.
5. Derived classes are sometimes called subclasses
6. The base keyword refers to the base class.
7. The term polymorphism refers to an objects ability to take many different forms.
8. When a derived class method has the same name as a base class method, it is often said that the derived class method overrides the base class method.
9. The *Virtual* Keyword declares a class that is allowing to be overridden by another method.
10. The Override keyword declares that a method overrides another method in the base class.
11. A class that is not instantiated, but used only as a base class is called an abstract class
12. To declare an abstract class, you use the abstract keyword in the class header.
13. A regular, non- abstract class is sometimes called a concrete class.
14. An abstract method is a method that appears in a class, but expects to be overridden in a derived class.
15. An abstract property is a property that appears in a class, but expects to be overridden in a derived class.
16. Inheritance allows for a base class reference variable to reference a derived class object.

True/False

1. The Base class inherits fields, properties, and methods from the derived class. **False**
2. Polymorphism allows a class variable of the base class type to reference objects of either the base class or the derived class types. **False**
3. Properties in a base class cannot be overridden in the same way that methods can be overridden. **False**
4. A base class reference variable can reference an object of any class that is derived from the base class. **True**
5. A statement that tries to use the new operator to instantiate an abstract class it will not compile. **True**
6. A class that is not intended to be instantiated, but used only as a base class, is called a concrete class**. True**
7. When an abstract property appears in a class, it must be overridden in any class that is derived from the class. **False**

Short Answer:

1. What does a derived class inherit from the base class?

: Properties and methods

1. Look at the following code i.e: Class Tiger : Felis

What are the base class and the derived class?

: base- Felis

:derived- Tiger

1. Can methods in the derived class directly access the base class’s private members?

: No, must use the base keyword to reference

4.

1. When you create an instance of a derived class, which constructor is called first?

: Base

1. In what situation would you want to use an abstract class instead of a base class?

: When you do not plan on instantiating the class.

1. What is the primary difference between an abstract class and a concrete class?

: An abstract, you do not instantiate. A concrete you do.

1. Can abstract classes contain abstract properties?

: No, but they can contain abstract methods with the class.